

NOTULAE DE RANUNCULACEIS SINENSIBUS (XX)

Wen-tsai Wang

Institute of Botany, Chinese Academy of Sciences, Nanxincun 20, Xiangshan, Beijing
100093, CHINA

Michael J. Warnock

Texas Regional Institute for Environmental Studies, Sam Houston State University,
Huntsville, Texas 77341 U.S.A.

Guanghua Zhu

Missouri Botanical Garden, P. O. Box 299, St. Louis, Missouri 63110 U.S.A.

ABSTRACT

Delphinium pseudoyunnanense W.T. Wang & M.J. Warnock, *D. kansuense* W.T. Wang var. *villosiusculum* W.T. Wang & M.J. Warnock, and *Thalictrum simaoense* W.T. Wang & G. Zhu are described as new. New combinations are provided for *Delphinium shawurense* W.T. Wang var. *pseudoaemulans* (C.Y. Yang & B. Wang) W.T. Wang, *D. delavayi* Franch. var. *baoshanense* (W.T. Wang) W.T. Wang, *D. umbrosum* Hand.-Mazz. var. *drepanocentrum* (Bruhl) W.T. Wang & M.J. Warnock, *Batrachium trichophyllum* (Chaix ex Villars) Bosche var. *jingpoense* (G.Y. Chang et al.) W.T. Wang, and *Ranunculus* sect. *Stenoglossa* (W.T. Wang) W.T. Wang. These new taxa and new combinations are necessary to facilitate ongoing study of the Flora of China.

KEY WORDS: Ranunculaceae, *Batrachium*, *Delphinium*, *Ranunculus*, *Thalictrum*, China, systematics, flora

The following new taxa and new combinations have been brought to light by ongoing work on the Flora of China.

Delphinium pseudoyunnanense W.T. Wang et M.J. Warnock, *spec. nov.*
TYPE: CHINA. Yunnan Between Tengchong and Longling

(龙陵), on banks of road, common only beyond Nan Kao Chai, fl. pale lavender purple, 15 Sep 1922, *J.F. Rock 6551* (HOLOTYPE: GH).

Delphinium yunnanense auct non (Franch.) Franch.: Munz, *J. Arnold Arb.* 48:543. 1967, p.m.p., quoad *Rock 6551*.

Herba perennis. Caulis 1.5 m? altus, parte inferna ignota, superne glaber, ramosus. Folia caulina superna longiuscule vel breviter petiolata; laminae tenuiter coriaceae, ambitu pentagonae, ca. 7.5 cm longae et latae, basi cordatae, 3-sectae, segmento centrali lanceolato-lineari ca. 6.5 mm lato apice attenuato, segmentis lateralibus inaequaliter 2-partitis, lobis lanceolato-linearibus vel anguste lanceolatis, vel indivisae, lanceolato-lineares, ca. 6 cm longae, 6 mm latae, supra prope marginem sparse adpresseque puberulae, subtus sparse crispule adpresseque puberulae; petioli 1.4-7.8 cm longi, glabri, basi paullo dilatati, haud vaginati. Racemi axillares et terminales, 25-45 cm longi, densiuscule 18-30-flori; rhachis cum pedicellis glabrae; bractae anguste lanceolato-lineares, vel subulatae, 6-23 mm longae, 0.8-1.8 mm latae, sparse puberulae; pedicelli 0.25-30 cm longi, superne 2-bracteolatae; bracteolae anguste lanceolato-lineares, 5-9 mm longae, 0.8-1 mm latae, utrinque sparse adpresseque puberulae, margine ciliolatae. Sepala purpurea, extus dense adpresseque puberula, intus glabra, superum elliptico-obovatum, 11-14 mm longum, 6-8 mm latum, calcare sepalino subulato 13-15 mm longo recto basi 1.8-2.2 mm crasso, cetera oblonga, 10-12 mm longa, 3.5-6.0 mm lata. Petala apice 2-lobata, ciliata. Stamina ca. 9.6 mm longa, unguibus ca. 4 mm longis sparse puberulis basi breviter appendiculatis, limbis suboblongis ca. 4.6 mm longis 3.2 mm latis prope medium 2-fidis margine longe ciliatis ventre supra basin dense luteo-barbatis. Stamina ca. 4 mm longa, filamentis plerumque margine sparse pilosis. Carpella 3, ovaris ca. 2.2 mm longis apice sparse puberulis, stylis ca. 1.5 mm longis basi sparse puberulis. Folliculi anguste oblongi, 12-16 mm longi, 2.5-3.5 mm lati, subglabri, stylis persistentibus 2.5-3.0 mm longis. Semina brunnea, tetrahedralia, ca. 1.2 mm longa, ad angulos anguste alata.

Affine *D. yunnanense* (Franch.) Franch., quod racemis laxe 3-10-floris, pedicellis usque ad 8.5 cm longis, floribus majoribus, calcaribus sepalinis 17-24 mm longis, petalis apice emarginatis glabris, filamentis plerumque glabris, ovaris saepe dense puberulis.

This new species is closely related to *Delphinium yunnanense* (Franch.) Franch., differing from that species in racemes elongate, densely 25-45-flowered, pedicels shorter, 0.25-30 cm long, flowers smaller, with sepaline spurs 13-15 mm long, petals ciliate and 2-lobed, filaments mostly pilose at upper margin, and ovaries sparsely puberulous only near apex. In *D. yunnanense*, the racemes are laxly 3-10-flowered, pedicels are up to 8.5 cm long, the flowers are larger, with sepaline spurs 17-24 mm long, the petals are glabrous, emarginate at apex, the filaments are mostly glabrous, and the ovaries are usually densely puberulous.

Delphinium kansuense W.T. Wang var. *villosiusculum* W.T. Wang et M.J. Warnock, var. nov. TYPE: CHINA. Qinghai (青海): the reaches of Datong River (大通河流域), between Tien Tang Ssu and Shan Shin Ming (三十名), alt. 3000 m, Sept. 15, 1915, *Farrer & Purdom 800* (HOLOTYPE: MO).

A *D. kansuensi* W.T. Wang var. *kansuensi* differt racemi rachide pedicellis pilis mollibus plus minusve patentibus tectis, bracteis bracteolisque dorso sparse puberulis.

This new variety differs from the typical variety in the raceme rachis and pedicels densely covered with spreading soft hairs, and in the bracts and bracteoles abaxially covered with sparse hairs. In the typical variety, the raceme rachis and pedicels are densely covered with appressed short hairs, and the bracts and bracteoles are also abaxially densely covered with appressed short hairs.

The locality of Kansu (甘肃) indicated on the type of this new variety is erroneous (Farrer 1926, pp. 138-237). The typical variety is restricted to the mountainous region of Central Gansu Province and the ranges of the two varieties are separated by approximately 250 km.

Delphinium shawurense W.T. Wang var. *pseudoaemulans* (C.Y. Yang et B. Wang) W.T. Wang, *stat. et comb. nov.* BASIONYM: *Delphinium pseudoaemulans* C.Y. Yang et B. Wang, *Acta Phytotax. Sin.* 30:86. 1992.

Delphinium shawurense W.T. Wang, characterized by its leaf lobes being long acuminate or caudate at apex, has two varieties, var. *shawurense* and var. *albiflorum* C.Y. Yang et B. Wang, both restricted to Mt. Shawur, Hoboksar County, Xinjiang Autonomous Region and both with stems mostly glabrous and hispidulous only near the base. The two varieties differ from each other in indumentum of the raceme and in color of sepals. *Delphinium pseudoaemulans* C.Y. Yang et B. Wang is also endemic to Mt. Shawur and its leaves are similar to *D. shawurense*, distinguished from the latter only by its stems being hispid below and sparsely puberulous above, and is better treated as a variety of *D. shawurense*.

Delphinium delavayi Franch. var. *baoshanense* (W.T. Wang) W.T. Wang, *stat. et comb. nov.* BASIONYM: *Delphinium baoshanense* W.T. Wang, *Bull. Bot. Res. Harbin* 69(1):12.1989.

Delphinium baoshanense, restricted to Baoshan County of western Yunnan Province, is closely related to *D. delavayi*, differing only in its much more strongly divided leaves, and in raceme rachis and pedicels covered with only white appressed hairs. The raceme rachis and pedicels of *D. delavayi* are covered with both white appressed hairs and yellow spreading glandular hairs. Heretofore, *D. delavayi* comprised three varieties. The typical variety is widely distributed on the Yunnan Plateau, neighboring western Guizhou Province, and southwestern Sichuan Province, and in the northern part of its range occur the two other varieties, var. *pogonanthum* (Hand.-Mazz.) W.T. Wang and var. *lasiandrum* W.T. Wang. Geographically, *D. baoshanense* appears to be a variant marking the western edge of the geographic distribution of *D. delavayi*.

Delphinium umbrosum Hand.-Mazz. var. *drepanocentrum* (Bruhl) W.T. Wang et M.J. Warnock, *comb. nov.* BASIONYM: *Delphinium altissimum* Wall. var.

drepanocentrum Bruhl *ex* Huth, Bot. Jahrb. Syst. 20:419. 1895. *Delphinium altissimum* Wall. subsp. *drepanocentrum* Bruhl, Ann. Bot. Gard. Calc. 5:101. 1896. *Delphinium altissimum* Wall. subsp. *drepanocentrum* (Bruhl) Chowdhury *ex* Mukerjee, Bull. Bot. Surv. India 2:293-295. 1961.; W.T. Wang, *Fl. Reipubl. Pop. Sin.* 27:402. 1979. *Delphinium drepanocentrum* (Bruhl) Munz, J. Arnold Arb. 49:94, fig. 13, L. 1968; Tamura, Acta Phytotax. Geobot. 23:100. 1968.

This new combination is necessitated by the editorial policy of the Flora of China Project to recognize only one infraspecific rank within a genus. Use of variety as the infrageneric rank for the Chinese *Delphinium* requires fewer new combinations than use of subspecies.

Thalictrum simaoense W.T. Wang et G. Zhu, *spec. nov.* TYPE: CHINA. Yunnan (云南): mountain west of Simao (思茅), alt. 2000 m, on cliff, A. Henry 13096 (HOLOTYPE: MO; Isotype: NY). Figure 1.

Herba perennis, tota glabra. Caules aliqui caespitiosi, graciles, 9-15 cm alti, 0.5-0.7 mm diam., supra basin vel prope medium dichotome ramosi. Folia basalia 7.0-12.8 cm longa, longe vel longiuscule petiolata, bi-ternata; laminae 5-9 cm longae, 6.2-8.0 cm latae; foliola tenuiter papyracea, orbiculari-ovata, reniformia, vel suboblata, 0.9-1.8 cm longa, 1.0-2.8 cm lata, basi profunde cordata vel subcordata, apice rotundata vel subtruncata, margine inconspicue 3-5-lobulata, pauce rotundato-dentata, nervis supra indistincte prominulis subtus prominentibus retem conspicuum formantibus; petioli graciles, 1.8-3.8 cm longi; stipulae brunneae, membranaceae, lineares, ca. 2.5 mm longae. Folia caulina 1-2, foliis basalibus similia, sed saepe minora, 1.5-6.5 cm longa, 1.5-3.4 cm lata, foliolis plerumque oblatis 0.4-1.0 cm longis 0.45-1.20 cm latis basi subcordatis indistincte 3-lobulatis, lobis margine integris, petiolis 0.2-3.0 cm longis, stipulis ca. 1 mm longis margine laceratis. Monochasia terminalia, 2(-3)-flora; bractae breviter petiolatae, ternatae, ca. 7 mm longae, foliolis late rhombicis indistincte 3-lobulatis, vel subsessiles, simplices, ellipticae vel ovatae, 2-4 mm longae; pedicelli capillares, 1.7-2.2 cm longi. Flos ca. 1 cm diam. Sepala 4, alba, late elliptica vel elliptica, 4.2-5.0 mm longa, 3.0-3.5 lata, apice rotundata vel obtusa. Stamina 9-15, 3.5-4.0 mm longa, filamentis filiformibus 2.2-3.0 mm longis apicem versus paulo incrassatis, antheris oblongis 1.0-1.2 mm longis apice indistincte breviterque apiculatis. Carpella 10-13, sessilia, ca. 2.8 mm longa, ovariis fusiformibus ca. 1.4 mm longis, stylis ovariis subaequilongis subulatis apice hamatis vel circianatis et ventre indistincte stigmaticis. Achenia non satis matura bilateraliter compressa, complanata, sessilia, fusiformia, ca. 1.9 mm longa, 0.5 mm lata, utrinque tenuiter 3-costata, stylis persistentibus ca. 1.2 mm longis apice hamato-curvatis.

Affine *Thalictrum rostellato* Hook. *f.* et Thoms., quod foliis dorso pedicellisque minute puberulis, antheris apice obtusis haud apiculatis, carpellis paucioribus 4-7 carpophoris instructis recedit.



Figure 1. *Thalictrum simaoense* W.T. Wang et G. Zhu, *spec. nov.* (A. Henry 13096). A. habit; B. flower; C. flower details showing gynoecium and the filiform filaments of stamens.

With more or less filiform filaments and elongate hooked styles, this new species is related to *Thalictrum rostellatum* Hook. f. & Thoms., and is distinguished from that species by the entirely glabrous plant, the shortly apiculate anthers, and the flower with more (10-13) carpels which lack carpophores. In *T. rostellatum*, the leaves abaxially and pedicels are minutely puberulous, the anthers are obtuse at apex, and the flower has 4-7 carpels with carpophores at base.

Batrachium trichophyllum (Chaix ex Villars) Bosche var. *jingpoense* (G.Y. Chang *et al.*) W.T. Wang, *stat. et comb. nov.* BASIONYM: *Batrachium jingpoense* G.Y. Chang *et al.*, Bull. Bot. Res. Harbin 12:241, fig. 1. 1992.

Batrachium jingpoense G.Y. Chang *et al.*, restricted to the northern Heilongjiang Province, is closely related to the northern temperate species *B. trichophyllum* (Chaix ex Villars) Bosche, differing from the latter in the smaller and tetramerous flowers with fewer stamens. A widespread species of the genus in China, *B. bungei* (Steud.) L. Liou, has a variety, var. *micranthum* W.T. Wang (Wang 1995), differing from the typical variety also in the small and often tetramerous flowers with fewer stamens. Thus, *B. jingpoense* may be better to be treated as a variety of *B. trichophyllum*.

Ranunculus L. sect. *Stenoglossa* (W.T. Wang) W.T. Wang, *stat. et comb. nov.* BASIONYM: *Ranunculus* L. subgen. *Stenoglossa* W.T. Wang, Bull. Bot. Res. Harbin 15:320. 1995.

This new combination is necessitated by the Flora of China Project limitation to a single supraspecific rank within each genus. Grouping the Chinese *Ranunculus* species into sections is more expeditious than use of subgenera.

Clematis minggangiana W.T. Wang, *spec. nov.* TYPE: CHINA. Central Yunnan (云南) : without field notes, 1939, *Ming-gang Li* A2872 (HOLOTYPE: GH).

Liana lignosa. Ramuli atro-purpurei, sparse adpresso puberuli, inconspicue canaliculati. Folia opposita, longe vel breviter petiolata, vel simplicia, lamina chartaceis cordato-ovatis 10.5-12.5 cm longis, 7.8-8.8 cm latis, basi cordatis apice acuminatis margine integris supra as costam et nervos laterales puberulis subtus puberulis, nervis basalibus 5 subtus prominentibus cum nervolis prominulis retem conspicuum formantibus, vel supra aliqua ternata, foliolo terminali distincte petiolulato elliptico-ovato vel elliptico, 3-10.8 cm longo, 1.7-7.2 cm lato, basi subcordato rotundato vel late cuneato apice acuminato, foliolis lateralibus breviter petiolulatis vel subsessilibus eo terminali similibus sed minoribus 1.2-7.8 cm longis, 0.5-5.2 cm latis; petiolis 0.8-6.8 cm longis, dense puberulis. Cymae axillares, 1.6-6.5 cm diam., 3-25-florae; pedunculi 1.8-8.2 cm longi, dense puberuli; bracteae vel foliaceae, petiolatae, anguste ovatae vel ellipticae, 1.1-3.3 cm longae, 1-1.4 cm latae, vel lineares vel subulatae 2.5-8 mm longae, 0.3-2 mm latae; bracteolae subulatae, 1.5-5.5 mm longae; pedicelli 0.5-2.5 cm longi, densissime puberuli. Flos pendulus, campanulatus, 1.5-1.8 cm diam. Sepala 4, lutea purpureo-suffusa (?), lanceolato-lineariter, 1-1.8 cm longa, 2.5-5 mm lata, apice recurva, extus tota facie intus superne

tantum sparse adpresseque puberula, margine dense velutina. Stamina sepalis subaequilongia, filamentis 8-14 mm longis dense villosis, antheris linearibus 4 mm longis glabris. Carpella dense villosa.

Affinis *C. henryi* Oliver, a qua foliis cordato-ovatis margine integris, cymis 3-35-floris, sepalis lanceolato-linearibus intus superne puberulis facile distinguitur.

This species is a new member of the sect. *Campanella* Tamura, and related to *Clematis henryi* Oliver, a species also with both simple and ternate leaves, differing from that species in the cordate-ovate entire leaves, 3-25-flowered cymes, and lanceolate-linear sepals, which are sparsely puberulous above inside. In *C. henryi*, the leaves are lanceolate and with denticulate margins, the cymes are usually 1-flowered, and the sepals are ovate or narrowly ovate and glabrous inside.

The new species is named after the collector, Ming-gang Li, who made important plant collections in central Yunnan Province, particularly in the Mt. Wuliangshan of the Jingdong County, in the thirties of this century.

ACKNOWLEDGMENTS

The research was conducted at GH, MO, and NY. The senior author thanks Peter H. Raven for his kind invitation to visit the US and also thanks David E. Boufford, Ihsan Al-Shehbaz, Guanghua Zhu, Lisa M. Campbell, and Pam White for their assistance and hospitality during his visit to MO and NY. MJW appreciates the assistance and support of the staffs of GH and MO during visits there.

LITERATURE CITED

- Farrer, R. 1926. *The Rainbow Bridge*. Edward Arnold & Co. London, Great Britain.
Wang, W.T. 1995. Notulae de Ranunculaceis Sinensibus (XVIII). *Guihaia* 15(2):97-105.